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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,291	07/29/2003	Gopalakrishnan Janakiraman	200208213-1	5391

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FORT COLLINS, CO 80527-2400

EXAMINER
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RAHMAN, FAHMIDA

ART UNIT	PAPER NUMBER
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2116

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/628,291

Applicant(s)

JANAKIRAMAN ET AL.

Examiner

Fahmida Rahman

Art Unit

2116

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14, 18-22 and 25-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14, 18-22, 25-32 is/are allowed.
- 6) ☒ Claim(s) 33-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2116

### **DETAILED ACTION**

1. This final action is in response to communications filed on 2/2/07.
2. No new claims have been added, no claims have been amended and claims 15-17, 23-24 have been cancelled. Thus, claims 1-14, 18-22, 25-39 are pending.

### **Double Patenting**

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 33-39 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-45 of U.S. Patent No. 6813897.

Although the conflicting claims are not identical, they are not patentably distinct from

Art Unit: 2116

each other because both the pending application and the issued patent disclose the same method of supplying power to at least one electrical device.

The first limitation of claim 33 is "determining a power demand of the at least one electrical device" is present in claim 8 of the issued patent, the limitation "a primary power supply means and a secondary power supply means for supplying power to meet the power demand of the at least one electrical device means" and the limitations "means for controlling an output power of the primary power supply means and the secondary power supply means based on whether the primary power supply means is operating at an efficient operating point" exist in claims 1, 2, 12 of the issued patent. For the limitation "based on whether the primary power supply operating at efficient operating point" of claim 33 of pending application, claims 2 and 4 of issued patent mention that secondary power supply provides supply when the demand exceeds threshold and the amount of supply by secondary supply is approximately equal to the amount by which demand exceeds the threshold. Claim 12 of issued patent mention that the threshold is associated with efficiency of primary power supply. The limitation "means for determining an efficient operating point for a primary power supply supplying power to device" of claim 34 is present in claim 12 of the issued patent. Increasing or decreasing workload is disclosed in claim 35 and cost of electricity is disclosed in claim 44 and claim 15. Claim 14 of issued patent disclosed operating point based on power factor. Claim 35 of issued patent disclosed reducing the power demand by migrating

Art Unit: 2116

workload. Therefore, the claimed invention of pending application is obvious over the issued patent 6813897.

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budelman (US Patent 5629608), in view of Applicant's admission of Prior Art (AAPA).

For claim 33, Budelman teaches the following limitations

**A system comprising:**

- **means for determining a power demand of at least one electrical device means** (801; lines 51-52 of column 4 mention that the secondary regulator continues to source current to load until primary regulator is able to meet the current demand of the load. Thus, the current demand of load is determined to decide if primary supply is sufficient for load);
- **a primary power supply means (420) and a secondary power supply means (440) for supplying power to meet the power demand of the at least one electrical device means** (devices of Fig 3);

Art Unit: 2116

- **and means for controlling (430) an output power of the primary power supply means** (step 805, 810, 808, 812 mention that the output of primary supply is maintained within the allowable range and sent to the load) **and the secondary power supply means based on whether the primary power supply means is operating at an efficient operating point** (808 ensures that the secondary supply is activated and continue to keep it activated based on whether primary is able to respond adequately to the current demand of load while staying within the allowable range).

Budelman does not explicitly mention that efficient operating point is based on power factor curve of the primary power supply means. However, the efficient operating point of primary supply is based on allowable output voltage range.

AAPA mentions that power factor is directly related to output power (Fig 7). Therefore, operating point based on output power is in fact based on power factor. The system of Budelman forces the primary power supply to work within certain voltage range. Therefore, the output power from 420 cannot be below a minimum power as output voltage must be within a range. If requirement of load is light, system would activate a load 450 to increase the power consumption so that 420 works within voltage range. Since the output power from primary supply can't be less than a minimum allowable power, the operating point is based on minimum output power from first supply. Therefore, the operating point is based on power factor curve too, as output power and power factor are directly related.

For claim 34, note Fig 5.

For claim 35, 430 is a workload manager that activates load 450 to keep 420 within efficient point.

For claim 36, power factor curve is an efficiency curve.

4. Claim 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budelman (US Patent 5629608), in view of AAPA, further in view of Bavaro et al (US Patent 4794272).

For claim 37, Budelman in view of AAPA teaches all of the limitations of claim 33 as stated above. In addition, Budelman considers cost in designing power supply system (line 48 of column 1 mentions that prior solutions may be impractical in view of cost). The system of Budelman has two supplies with one source. The supply unit is connected to one source instead of two sources. However, Budelman does not consider determining operating point based on cost from two supplies.

The system of Bavaro et al teaches two sources (310, 330) for one unit (340). The unit chooses solar supply over battery supply (lines 49-55 of column 1). It is widely well known that solar supply is cheaper than battery supply. Therefore, Bavaro et al teach a system where an operating point of a power supply is determined based on cost of

Art Unit: 2116

electricity from two sources (340 is the regulator which adjusts the operating point as shown in Fig 3 based on electricity from two sources 330 and 310. Thus, cost of electricity from two sources is being considered in determining operating point).

It would have been obvious to one ordinary skill in the art at the time the invention was made to take electricity from two alternate source considering the cost as taught by Bavaro et al, since that ensures the reliability and cost-effectiveness of a system.

5. Claims 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budelman (US Patent 5629608), in view of AAPA, further in view of Blair et al (US Patent 6700351).

For claim 38, Budelman, in view of AAPA, teaches the output power of primary supply means exceeding an output power of the primary power supply means operating at efficient operating operating point. However, Budelman, in view of AAPA, does not teach the increase of output power of secondary supply in response to exceeding output power of primary operating at efficient operating point.

Blair et al teach a system where secondary supply increases the output when primary output exceeds the efficient operating point (lines 1-66 of column 7 teach various current sharing method so that all power module can operate efficiently).



Art Unit: 2116

It would have been obvious for an ordinary skill in the art at the time the invention was made to combine the teachings of Budelman, AAPA and Blair. One ordinary skill would be motivated to rearrange the output of power supply, since that would provide a better power management.

For claim 39, line 40 of column 2 of Budelman mention that secondary operates to source additional current.

#### **Allowable Subject Matter**

Claims 1-14, 18-22, 25-32 are allowed.

#### **Response to Arguments**

Applicant's arguments filed on 2/2/07 with respect to double patenting of claims 1-14, 18-22, 25-32 have been fully considered and persuasive. Therefore, the double patenting rejection with respect to claims 1-14, 18-22, 25-32 is withdrawn.

Applicant's arguments with respect to 103(a) rejections of claims 33-36 have been fully considered but they are not persuasive.

Applicant argues that if A and C both are based on B, then A is not be based on C. Therefore, operating point and power factor curve based on output power cannot make operating point based on power factor curve.

Art Unit: 2116

Examiner disagrees. If  $A=f_1(B)$  and  $C=f_2(B)$ , then  $B=f_3(A)$  and  $B=f_4(C)$ . In that case,  $A=f_1(f_4(C))$ , or, A is based on C. Therefore, Budelman's operating point based on output power and AAPA's power factor curve based on output power indicate that the operating point is based on power factor curve.

### Conclusion

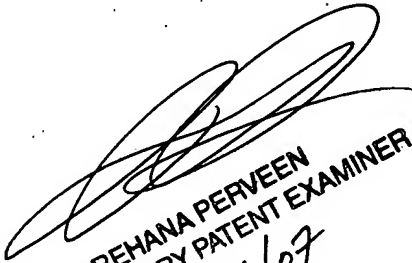
**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fahmida Rahman whose telephone number is 571-272-8159. The examiner can normally be reached on Monday through Friday 8:30 - 6:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on 571-272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2116

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Fahmida Rahman  
Examiner  
Art Unit 2116

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SUPERVISORY PATENT EXAMINER  
4/16/07